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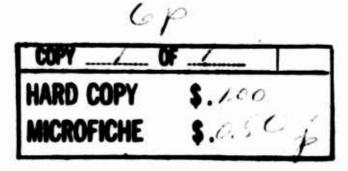
Analytical Approximations
Volume 8

Cecil Hastings, Jr. James P. Wong, Jr.

P-376

2 March 1953

Approved for OTS release







Bessel Function of Imaginary Argument: To better then .0005 over $(1,\infty)$,

$$e^{-x}I_1(x) = \frac{x}{\sqrt{5.3+7.7x+3.9x^2+2\pi x^3}}$$

Bessel Function of Imaginary Argument: To better than .00006 over $(2,\infty)$,

$$e^{-x}I_1(x) \doteq \frac{x}{\sqrt{10.69 + 3.32x + 4.68x^2 + 2\pi x^2}}$$

Bessel Function of Imaginary Argument: To better than .000,008 over $(4,\infty)$,

$$e^{-x}I_1(x) \doteq \frac{x}{\sqrt{10.86 + 2.82x + 4.78x^2 + 2\pi x^3}}$$

Bessel Function of Imaginary Argument: To better than .0006 over $(0,\infty)$,

$$e^{-x}I_0(x) \doteq \sqrt{\frac{1 + .297x + .311x^2}{1 + 2.333x + 2.137x^2 + 2.096x^3}}$$

Bessel Function of Imaginary Argument: To better

than .00016 over $(2,\infty)$,

$$e^{-x}I_{o}(x) = \frac{1}{\sqrt{2\pi x}} \left\{ 1 + \frac{.120}{x} + \frac{.136}{x^{2}} \right\}.$$